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09/879,769	06/12/2001	Wm. Carter Bullard	10678-2US	4712

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EXAMINER	
AVELLINO, JOSEPH E	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,769	BULLARD, WM. CARTER	
	Examiner	Art Unit	
	Joseph E. Avellino	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/12/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-10 are presented for examination; claim 1 independent.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The above-mentioned claims recite the limitation "ingress and egress flow activity" which lacks antecedent basis. Correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (USPN 6,751,663) (hereinafter Farrell).

6. Referring to claim 1, Farrell discloses a method of auditing a communication session between a source connected to a first node of a service network and a destination connected to a second node of the service network, wherein at least one of the source and destination are outside of the service network and are in communication with an interface of the service network, the method comprising:

capturing flow activity of selected traffic in selected parts of the network using different flow monitors 702 at selected states and points in time during the communication session, including a flow descriptor (i.e. sequence numbers) and corresponding time data for selected datagrams placed in the service network (col. 30, lines 44-58); and

using the flow descriptors and their corresponding time data to identify flow activity from other parts of the network that corresponds to flow activity in the service network (i.e. compared to other values from other monitors) (col. 30, lines 56-58).

Farrell does not specifically disclose capturing flow activity of selected traffic outside of the service network. However it can be construed that each flow monitor is responsible for a mutually exclusive "part" of the network, and comparing values from various flow monitors 702 can be considered identifying flow activity outside of the service network for a particular flow monitor that corresponds to flow activity in the service network. IT would be obvious to one of ordinary skill in the art make this association of different parts of the network being different service networks since Farrell discloses that it is possible that other parts of the flow are in other parts of the network and that the flow monitor may indicate a dropped packet when the packet is

actually *in a different part of the network* (col. 30, lines 52-54). This would lead one of ordinary skill in the art to consider each flow monitor 702 is responsible for a separate mutually exclusive part of the network, since if they were all in the same service network, the false dropped packet signal would not occur due to the fact that the flow monitor would eventually record the packet.

7. Referring to claim 2, Farrell discloses the flow activity captured includes total packets for the selected datagrams (col. 30, lines 44-58), the method further comprising:

comparing the total packets of selected flow activity outside of the service network (i.e. another flow monitor in another service network) with the total packets in corresponding flow activity in a service network to perform packet loss data analysis (col. 30, lines 56-58).

8. Referring to claim 3, Farrell discloses comparing the total packets of selected flow activity outside of the service network with the total packets in corresponding flow activity in the service network to determine the condition of no loss (col. 30, lines 56-58).

9. Referring to claim 4, Farrell discloses comparing the total packets of selected flow activity outside of the service network with the total packets in corresponding flow activity in the service network to determine the condition of alternate path around the service network (i.e. if the service network did not record a packet whereas another

service network did, then inherently there must be a condition of "alternate path around the service network") (col. 30, lines 56-58).

10. Referring to claim 6, Farrell discloses the steps are performed by a flow meter 702 (col. 30, lines 43-58).

11. Referring to claim 7, Farrell discloses determining if selected flow activity captured outside of the service network corresponds to the flow activity captured in the service network (i.e. comparing sequence numbers), and if so, then the datagarams associated with the selected flow activity captured outside of the network have successfully passed through the service network, and thus have received a desired service (one of ordinary skill in the art would make this assumption since if there was no packet loss, then it is considered that the transaction has been completed) (col. 30, lines 44-58).

12. Referring to claim 8, Farrell discloses determining if selected flow activity captured outside of the service network does not correspond to the flow activity captured in the service network (i.e. comparing sequence numbers), and if so, then the datagarams associated with the selected flow activity captured outside of the network have successfully passed through the service network, and thus have may not have received a desired service (one of ordinary skill in the art would make this assumption

since if there was packet loss, then it is considered that the transaction has not been completed and there was an error) (col. 30, lines 44-58).

Claims 5, 9, 10, 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell in view of Cen (USPN 6,738,349).

13. Referring to claim 5, Farrell discloses the invention substantively as described in claim 1. Farrell furthermore discloses storing the flow activity outside of the service network (i.e. in another service network) in flow activity records of one or more flow collectors, and storing the flow activity in the service network in flow activity records of one or more internal network flow collectors wherein the identifying step is performed using the records in the external and internal network flow collectors (Farrell discloses that the packet loss detector notes information about packets into a log; col. 30 ,lines 53-56; and one of obvious skill in the art would consider the other monitors 702 to be similar to the one of the internal network, the external monitor transmits the value to the internal monitor to determine if there has been loss in the network) (col. 30, lines 44-58). Farrell does not specifically disclose these records are time-stamped records. In analogous art, Cen discloses another flow monitoring system wherein the monitor records a time stamp from each packet (e.g. abstract). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Cen with Farrell since Farrell discloses that the monitor can be disposed in an out of line arrangement in which network packets are copied from the device and coupled to the

out-of line monitor (col. 29, lines 12-14). This would lead one of ordinary skill in the art to search for different configurations of network monitors and would find Cen and its configuration of ingress and egress monitors connected by an out of band network 24 (Figure 1; and abstract).

14. Referring to claim 9, Farrell discloses the invention substantively as described in claim 1. Farrell furthermore discloses the invention as described in claim 8, wherein if the flow activity does not correspond to the flow activity in the network, then they may have not received a desired service. Farrell does not specifically disclose ingress and egress flow activity is captured at a service interface in the service network determining if the selected flow activity captured outside of the service network corresponds to one, but not both of, ingress and egress flow activity captured at the ingress and egress service interface. In analogous art, Cen discloses another flow monitoring system wherein ingress and egress packet statistics are captured (Figure 1, 10 and 20; Figure 2, step 3; col. 2, line 55 to col. 3, line 38) which would generate a packet loss (i.e. packet loss statistics, col. 3, lines 20-67) in the service network. Taking this disclosure of Cen and applying it to the invention of Farrell, the service network packet detector would then compare its values with other monitors to determine whether there has been packet loss for the flow through the network (col. 30, lines 56-58) and would then determine if there was a packet loss and the flow activity may not have passed bidirectionally through the service network and thus may not have received a desired service. It would be obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Cen with Farrell since Farrell discloses that the monitor can be disposed in an out of line arrangement in which network packets are copied from the device and coupled to the out-of line monitor (col. 29, lines 12-14). This would lead one of ordinary skill in the art to search for different configurations of network monitors and would find Cen and its configuration of ingress and egress monitors connected by an out of band network 24 (Figure 1; and abstract).

15. Referring to claim 10, since that if the flow activity corresponds to one but not both of the ingress and egress flow activity as explained in the rejection for claim 9, then it would also correspond to some, but not all, the ingress and egress flow activity. By the rationale stated above, the claim is rejected for similar reasons as stated above.

16. Referring to claims 12 and 13, Farrell discloses the invention substantively as described in claim 1. Farrell furthermore discloses if the flow activity captured outside of the service network corresponds to (i.e. satisfies the packet loss flags received in the service network) flow activity captured in a service network then the destination is determined to be reachable and a connection exists between the source and the destination (one of ordinary skill in the art would understood that if a packet is not lost in the service network, then it is determined, from the view of the service network, that the destination is reachable, otherwise, if there is packet loss, then the destination is unreachable according to the service network) (col. 30, lines 56-58). Farrell does not disclose having source egress and destination ingress flow activity outside of the

service network. In analogous art, Cen discloses another flow monitoring system wherein ingress and egress packet statistics are captured (Figure 1, 10 and 20; Figure 2, step 3; col. 2, line 55 to col. 3, line 38) which when applied to the system of Farrell would then compare its values with other monitors to determine whether there has been packet loss for the flow through the network. It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Cen with Farrell since Farrell discloses that the monitor can be disposed in an out of line arrangement in which network packets are copied from the device and coupled to the out-of line monitor (col. 29, lines 12-14). This would lead one of ordinary skill in the art to search for different configurations of network monitors and would find Cen and its configuration of ingress and egress monitors connected by an out of band network 24 (Figure 1; and abstract).

17. Referring to claim 15, Farrell in view of Cen discloses the invention substantively as described in claim 5. Farrell does not disclose using time duration data to determing one-way delay parameters. In analogous art, Cen discloses using time duration data (i.e. time stamps) to determine one-way delay parameters (i.e. end-to-end latency) (col. 3, lines 16-67). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Cen with Farrell since Farrell discloses that the monitor can be disposed in an out of line arrangement in which network packets are copied from the device and coupled to the out-of line monitor (col. 29, lines 12-14). This would lead one of ordinary skill in the art to search for different configurations of

network monitors and would find Cen and its configuration of ingress and egress monitors connected by an out of band network 24 (Figure 1; and abstract).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell in view of Cen in view of Poulin (USPN 6,545,979).

18. Farrell in view of Cen discloses the invention substantively as described in claim 5. Farrell in view of Cen do not disclose calculating round-trip delay parameters, only one-way delay parameters as seen in claim 15 above. In analogous art, Poulin discloses another network flow controller method which uses time duration data to measure round-trip delay parameters (e.g. abstract). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Poulin with Farrell and Cen since Farrell discloses that the network activity record (NAR) can include various information regarding the activity including connection time information and data information (col. 8, lines 10-12). This would lead one of ordinary skill in the art to search for different information describing the activities of a particular flow of a user and would lead to Poulin and its method of measuring round trip delay of data (e.g. abstract).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell in view of Goldstein et al. (USPN 5,029,164) (hereinafter Goldstein).

19. Farrell discloses the invention substantively as described in claim 1. Farrell furthermore discloses the flow activity captured includes a mathematical representation of the sequence number loss distribution for the selected datagrams (col. 30, lines 44-58), the method comprising:

comparing the sequence number loss distribution of flow activity captured outside the service network with the sequence number loss distribution in corresponding flow activity in or at an interface of the service network to detect whether there is a deterministic pattern of missing sequence numbers (i.e. identifying missing packets with specific sequence numbers) in the flow activity captured in the service network (col. 30, lines 44-58). Farrell does not disclose the missing sequence numbers indicate that the service network is performing load balancing, and is not passing selected traffic through the service network.

In analogous art, Goldstein discloses another packet monitoring network which discloses whether missing sequence numbers indicate that the service network is performing load balancing, and is not passing selected traffic through the service network (i.e. congestion with dropped packets) (col. 1, lines 42-43). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Goldstein with Farrell since Farrell discloses developing new service options that take into consideration bandwidth usage (col. 5, lines 15-25). This would motivate one of ordinary skill to search for more efficient and better ways in managing bandwidth which would lead to Goldstein and their improved method of bandwidth allocation management (e.g. abstract).

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

21. Viccente et al. (US 2002/0143911) discloses host-based network traffic control system.

22. Ball et al. (USPN 6,446,200) discloses service management.

23. Perkins et al. (USPN 6,496,477) discloses network path diversity in media over packet applications.

24. Drysdale et al. (USPN 6,058,102) discloses performing SLA of communications network performance metrics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JEA
November 10, 2004

William C. Vaughn, Jr
Primary Examiner
Art Unit 2143